

U.S. Application Serial No. 10/563,014

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REMARKS

With entry of the above amendment, claims 1, 2, 7, 8 and 15-27 are now present in the application, claims 1, 2, 7 and 8 having been amended, claims 3-6 and 9-14 having been canceled without prejudice, and new claims 15-27 having been added. No new matter is introduced by these amendments, and no additional fees are due.

The objection to the drawings is believed to have been fully overcome with cancellation of the claims and claim terms objected to. With regard to the objection to claim 9, applicant notes that the "shut-off means" feature is indicated in Figures 3a and 3b by reference number 20. In light of the above Amendment and Remarks, the objection to the drawings is believed to have been fully overcome. No corrected drawing sheets are required.

Claims 12 and 13 are rejected under 35 U.S.C. §112, second paragraph. These claims have been canceled thereby rendering the rejection of claims 12 and 13 under 35 U.S.C. §112, second paragraph, moot.

At the outset, it is noted that the claims now pending in the application include independent claims 1, and 17. Independent claim 1 is, in part, directed to a device for separating impurities from a liquid including a reservoir having a top and a bottom for holding filtering material at a lower portion thereof and for holding a quantity of liquid in an upper portion thereof above the filtering material. The reservoir includes a liquid supply channel opening into the lower portion of the reservoir, facing the bottom of the reservoir for receiving a turbulent flow of filtering material and a fluid transport channel having an exit end disposed in the upper portion of the reservoir above the filtering material. The reservoir includes a fluid displacement channel comprising a pipe for carrying a displacement fluid under positive pressure for detaching impurities from the filtering material. The pipe of the fluid displacement channel has an exit end directed toward the entrance end of the fluid transport channel to induce turbulence in filtering material located between the entrance end of the fluid transport channel and the pipe, and directs a turbulent flow of dirty filtering material towards the entrance end of the fluid transport channel. A turbulent flow of filtering material and displaced impurities is projected in an upward direction along the fluid transport channel to exit in the liquid, at a point above the filtering material.

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These features are neither shown, described, nor suggested in either '201 - Hjelmner *et al.* or '215 - Bramlett, taken either alone or in combination.

Independent claim 17 is directed to a device for separating impurities from a liquid. The device has features of independent claim 1, including a reservoir for holding a quantity of liquid in an upper portion and above filtering material held in a lower portion. The lower portion of the reservoir includes an upwardly directed fluid displacement channel containing a fluid under positive pressure to create and direct a turbulent flow of dirty filter material through a fluid transport channel for delivery to the upper portion of a reservoir, above the filtering material. The turbulent flow of dirty filter material causes the contaminant attached to the dirty filter material to float to the current operating level of the liquid in the upper portion of the reservoir. The free surface of the quantity of liquid held in the upper portion of the reservoir containing the agitated dirty filter media is transported out of the reservoir. These features are neither shown, described, nor suggested in either '201 - Hjelmner *et al.* or '215 - Bramlett, taken either alone or in combination.

New claim 24 is directed to a method for separating impurities from a liquid, using the claimed device. Claim 24, through use of a selectively operable valve provides an alternating series of first, filtering of the liquid using a filter material to which the contaminants become attached, and thereafter, washing the filter material while preventing contamination of the accumulated filtered liquid. In the process of '201 - Hjelmner *et al.*, both filtering and washing occurs simultaneously, contrary to applicants claimed invention. '215 - Bramlett does not cure the deficiencies of '201 - Hjelmner *et al.*.

Claims 1-14 are rejected under 35 U.S.C. §102(b) as anticipated by '201 - Hjelmner *et al.* The rejection of claims 3-6 and 9-14 is rendered moot with the cancellation of those claims. Claim 1 has been amended in the manner described above to refer, in part, to a device for separating impurities from a liquid including a reservoir having a top and bottom for containing a liquid in an upper portion and for holding a filtering material in a lower portion. The reservoir includes at its bottom a fluid displacement channel containing a pressurized fluid under positive pressure. The pipe of the fluid displacement channel has an exit directed toward a fluid transport

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channel to direct a turbulent flow of dirty filtering material towards the entrance end of the fluid transport channel to project a turbulent flow of filtering material and displaced impurities in an upward direction along the fluid transport channel to exit in the liquid at a point above the filtering material.

'201 - Hjelmner *et al.* is directed to filtering a suspension or emulsion, which, with reference to FIG. 1, is imparted into the system via pipes 4, 5 as indicated by the reference designator A appearing at the bottom of tank 3. The imparted suspension emerges at mouth 6. Roof 7 is provided to prevent intrusion of the filter material into the exit mouth. The reference number 10 is applied to a "hauling device" that includes a transport pipe 12 having an inlet end spaced slightly above the bottom of tank 3. Pipe 12 conducts air as a transport medium to discharge dirty filter media in an upward direction indicated by arrow C. Pipe 12 is therefore apparently placed under vacuum by a "mammoth air pump," not shown. The dirty filter media is cleaned by a wash device 13 located in the upper portion of FIG. 1. The filtered liquid phase is discharged as indicated by arrow B at the top of FIG. 1, while reject from the wash device 13 is carried by an outlet as indicated by arrow G.

The features of Applicant's claimed invention as presented of record are not shown in '201 - Hjelmner *et al.* and the rejection under 35 U.S.C. §102(b) of claim 1 is believed to have been fully overcome. Claims 2, 7 and 8 depend directly or indirectly from independent claim 1 and incorporate the limitations thereof, and accordingly are believed to be allowable for the reasons set forth above with respect to claim 1. The rejection under 35 U.S.C. §102(b) is believed to have been fully overcome and should be withdrawn.

Claims 12 and 13 are rejected under 35 U.S.C. §103(a) as unpatentable over Hjelmner *et al.* in view of Bramlett. These claims have been canceled, thereby rendering the rejection moot.

Claims 1, 2, 7, and 8 and new dependent claims 15-16 as presented of record are believed to be allowable. Likewise, new independent claim 17 and claims 18-27, dependent therefrom, have features that are not taught or suggested in the art cited and hence are believed to be

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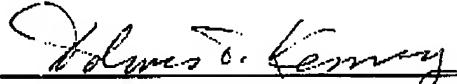
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allowable for the reasons set forth above. Accordingly, in light of the above amendment and remarks, all the claims now present in the application are believed to be allowable. An early allowance of the application is respectfully requested.

Respectfully submitted,

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